

Note Book.

Oct. 9 - Nov. 3 1929

Japan.

W. J. Morse.

at the
ance
Anagari

Hitoichi

373
11.23

Japan - winter
How
winter is

Margaret

Marginal

more

K D A K H - K

more.

~~George C. Lee~~

Dr. Le Clerc - lecture

Wednesday, Oct. 9, 1929,

Ferry fare and (1929)

175

Koccon, Japan, Cool and clear.

Left Koccon in about 8:15 A.M.

Bill for 3 - lodging and breakfast
amounted to \$11.30.

Left Koccon at 8:55 A.M.

Arr. Akita at 2:15 P.M.

Between Koccon and Saichoku
the country was not so heavily
forested. Some apple orchards were
noted. Considerable rice is grown.
At this time the rice is being
harvested. The bundles are placed
in shocks and the heads upright.
The bundles of rice here are placed
along the edges of the rice paddies,
and allowed to cure.

No red chins were noted
along the way. Considerable
white clover, however, was
noted along the roads, and

(Tengarru Fuzi) ^{Shake}
Especially along the paths
between the paddies.

At Kaiabe we saw a beautiful
shaped mountain and were told
that it was Mount Inabe, also
called "Tengarru Fuzi", a resting
volcano.

Numerous soy bean fields,
most of very large size, are being
widened along the way, especially
after passing Jimba.

About Hirosaka is the greatest
apple growing region of Japan.
During a short walk about
Asimori before train time the
stores were flooded with apples.
Many very large varieties and
all very beautifully colored.

The soy beans for the most
part would average about 2 feet.
Many of the fields were rather
of short growth, not over 15 in.

high. As yet no fields of beans
have been cut although the
plants were fully mature and
ready to cut. In many of the
young apple orchards soybeans
were planted in rows.

All along the north side
growing is very extensive in the
valleys. Back from the shore of
the Lagoon to the foot-
hills rice is grown almost
entirely. Nowhere have I seen
rice so extensively and for the
most part has been harvested.
Various methods of curing are
carried on. The racks as used
in Hokkaido are used to
some extent but the most
extensive is the pole method
a single pole with the

Bundles of rice tied at right
angles to each other about
12 bundles to a pole. †
In other cases the rice is cured
in small stacks, about 6
bundles to a stack. ‡

Very little hardy was noted.
Along a short ways a few
scattering vines were noted.

Arriving at Akita we went
at once to the Sekineya Inn
where we obtained rooms. We
were given a dish of sweet
pears of the "Choguro" variety.
These were fairly sweet and
very juicy, in fact are the best
pears we have had in Japan.
The stores along the streets where
fruits are handled have an
abundance of pears, and also
apples. There are said to be
Three varieties of the "Choguro".

year - the early, medium and late. The late variety on sale now is said to be by far the best.

After becoming established, we took a walk out to Chiaki Park which once belonged to some nobleman and had a castle. It was a very beautiful park and from various points on the high hill very pretty views of the surrounding country were obtained.

This section is famous for its oil production and mining. A school of mines is located here.

The park at cherry blossom time must be very pretty for cherry trees, many

of them quite large and scattered all over the park and in some sections of the park in rather large groves.

Was wandering about the park, many trees and shrubs were noted which appeared worthy of introduction.

As we started toward the drive we saw one of the most beautiful sunsets we have yet seen in Japan.

This seems to be a section for better bar plant as the leaf and stem are painted on many things and several confections are made from it.

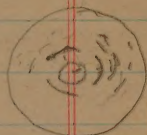
It is also a section for cherry bark materials.

Thursday - Oct. 10, 1929

Akita, Japan. Cool and clear
Saykams:

Bean cake

Bean oil



Saykams

I Bean cake

Fertilizer purposes

Cattle feed

Manufactures (Products)

Celluloid

albumin

Lacquer

Food

II - Bean oil

Food

Lighting.

Machine oil

Manufactured Products

cell use for oil

Soaps

I
Glycerine
Hard grease
Fattening acids
Waterproof liquid
Paint materials
Rubber substitutes

II - soy beans

- 1 Forage
- 2 Food
- 3 Fertilizer
- (2) Food

Cooking
Natto

Sprouts

Yuba

Bean curd

Soy bean milk

Soy sauce mash

Miso

Confections

Bread

Soy sauce

.. .. for Worcestershire

Food (continued)

Soybean flour

Vegetable soybeans

Soybean Flour

Flour alone

Instant coffee

Confections

Instant chocolate

Soy Sauce & ^{S.S.} _A mash

Soy sauce alone

Feed (cattle)

Fertilizer

Bean curd

Fresh.

Freezing

Yuba

Dried bean curd

Soybean curd mash

Frying with bean curd

Roasted with " "

Soybean Oil

Heavy oil

Med. "

Light "

Gas substitute

Paint oils

Alone

Varnish

Miscellaneous

Water-proof liquids

Used for all kinds

3

Fatty acids

Soaps.

Grease

Artificial butter

" Candles

" Soaps

all kinds grease material

Glycerine.

Explosives

Engineering products

Medical Products

Toilet "

Chil.

Salad oil

Butter substitutes

Lard "

Pat bean cake

Albumen

Food

Globulin.

Medical products

Food.

Miso

Soy sauce

Tofu

Worcestershire sauce material

Flour

Bread

Confections

Arrived at the Abita Exp.
Station about 9.15 P.M. where
we met Dr. K. Adachi, Director

of the station who has studied
soybeans extensively in Japan
and Manchuria. He showed
a diagram showing the
uses of the soybean as
listed above.

"Soybean - Its Cultivation
and Industry.

By K. Adachi. (7 yrs).

In Aikita prefecture only
3 or 4 varieties.

In ~~Korea~~ ^{Hokkaido} and Hondo
production annually
5,000,000 Koku

4,800,000 .. in Korea

9,800,000 Koku annually

10,000,000 Koku of soybeans

needed annually in
Japan. Used mostly

for food by Japanese.

200,000 Koku are

imported annually

from Manchuria. In
Japan little meat used so
soy beans must be used
as meat substitute. In
Akita soy bean production
gradually decreasing and
~~increased~~ production going
to Hokkaido

In future of soy beans
in Japan, increased
use for industrial and
human food purposes.
In Japan no increase
in use for forage because
of value of beans for human
food and for green manure.
Among the vegetables, the
protein of the soy bean is the
highest, and also of great
value for manufacturing

Purposes. Among the Japanese. They get most of their proteins from vegetables rather than animals as Japan has not sufficient land for animals. In the future, Japan must produce more soybeans to supply proteins for the increased Japanese population.

K. Adachi

Entire list of named soybean varieties grown in America.

<u>Forage -</u>	vetches
<u>Green manure -</u>	peas
	Bar clover
	Clover -
	Sweet clover.
	Dahlia
	Crimson clover.
	Orotolarias
	alfalfa.

Mr. Adachi interested in

Crops for short season
in rice paddies.

Humma crop sown
about 1st week in Aug. when
water is drained off. The
rice paddies are allowed to
remain until spring.
Rice planted between 1st
and 2nd weeks of June.

The station is increasing
5 varieties of soybeans
to supply farmers in the
Abita prefecture without
cost. The seed is sent to the
Agricultural societies who
distribute it among the
members. Occasionally the
station gives direct to the
farmers.

Varities grown are

Akita #27 - yellow seed
early and considered the
best. Just maturing. Large
seed, Heavy yields.

Akita variety - next best yields.
Larger seed. About 2 weeks
earlier than #27. yellow seed.

Ari (means brother). yellow seed.
High yields. About same
maturity as #27. Looks
very promising for seed
yield.

Shirayama (White Pod). Earliest
of those generally grown.
Yellow seed. Good for bean curd.

Kurosoya (Black Pod). This is
in the latest of the four best
varieties grown in Akita.

Variety Test.

U-gon (Golden Color)

Meguro (White eye)

Tamatokuri (27 is one of parents)

Yagi.

Chogetsu (In month of Oct.) ^{Parents of 27} Early

Ninchan (Chinese City Name). ^{From China}

Darumazigo (Round "2")

Mejiroichigo (Selected from Mejirs)

Early than Mejirs and
also has larger seed.

Kyushiro (Man's name. Selected
by some man named Kyu.

Sato (Sugar) is very profuse.

Kuroume (Black seed). One
of Major Generals (S. Sato)
brought this seed here. This
general has used for
green vegetable purposes. A
late variety and large pods.

Bekisugichigo^{#1} (Grows too much)

Kairyogazamanishiki (Round

Early,

Rikun "25.

Rikun "26.

Yogetsu (In March)

only

Akita, One of 5 best

Kaizenkakka (Kaizen (Korea) - Hakka (W. fls.)
small marluna

Hotenhabu (Hoten) & white variety

Karihatakiya.

Shirohakkokunigo "2 (white

4 bushels, high yielder), Largest
round variety.

Tokichi, (Main name), Is
most successful grower
in Aomori Prefecture.

Asahi (Sunrise).

Shiheigaiakaka (Manchurian white)

Kurosaya (Black Pod), One of

5 principal varieties grown
in Akita Prefecture.

Shinguko (4 grains in pod) ^{Manchurian} Early

Ani (brother) One of 5 best

Rikun "23, Smallest grained
variety.

Rikun 27.

Original Variety, grown in Akita
and called by farmers
Original variety

Tanryokuri (Light green)

Used mostly in Akita
as a green vegetable

Tanryokuri 2. (Light green)

Later than "1". Used
about Akita as green vegetable.

Kuro (Black), Flat seed.

Used as green vegetable.

Kurakake (Saddle). Used

for green vegetable.

Harvested some between

rows of ^{early} soy beans for
green manure.

Green manure work

only recently begun in this
prefecture. Red clover does

not succeed and is not
grown in this prefecture. The
station is looking for
green manure crops. Hairy
vetch is being tried.

We want to do

This office tested growing
soybeans for green manure
in young and old orchards.
Where soybeans are grown
in orchard, the crop interferes
with cultural practices.
That is in the old orchards.
Soybeans therefore best for
young orchards. In young
orchards of peaches, cherries,
and grapes soybeans are
used for green manure
on overhead systems
of training grapes and

and pear. Soybeans don't
do so well. Under this
overhead system, soybeans
do not get sufficient air
and also act as a place
for insects and diseases.

On the way to the Agricultural
Farm, about $1\frac{1}{2}$ miles from
the station, we passed through
an extensive rice section.
In parts of the section soybeans
were grown about the edges
of the paddies for seed purposes.
The varieties for the most part
were late, and about $3-3\frac{1}{2}$ ft.
high. The plants were in a single
row in hills 2 plants ~~to~~ in a hill.

While young apple orchards
are being trained for
shape soybeans have
been found a good green

manure. In such cases
the beans are planted 1st
week in Aug. after 1st
cultivation of orchard. The
bean plants are plowed
under for green manure
in late September or October.
The plants are about 18 in.
high and the pods just
starting. In turning under
the plants are pulled ^{by hand} and
placed on the ground and
then plowed under.

In Abita soybeans have
been used in orchards for
green manure. Previously
cow and horse manure
were used to fertilize the
orchards. The stockman
grows following the
practice of the Exp. Sta. are
using soybeans for

green manure. At least
10% of the orchard growers
are now using any beans
for green manure. This
practice is increasing
annually. The beans are
planted in rows.

Considerable work is being
done with apple and pears
at this station. The pears
are grafted on the wild pear
roots which are found in
the mountain regions.

Apricots are not grown
in this region although
hybrids between apricots
and plums are grown as
ornamentals in the

Gardens in this region.
The director in charge

of horticultural work is
Prof. Gōeō Shimada,
Agr. Engineer of Akita
The young man, Mr.

who accompanied us about
for Prof. Adachi took us thru
the vegetable gardens. A
great amount of work is
being done with the egg plant,
especially breeding.

We were advised that in
this section of Japan the
soybean plants are pulled
instead of being cut. After
curing the seed is threshed
out with mallets, flails,
and with rollers drawn by
a horse.

At the station we were
given Russian varieties
of soybeans brought here
by Prof. Adachi who

worked with the soy bean
8 years in Manchuria.
These varieties are said
to be very hairy and to have
5 to 6 seed per pod. The
seed, all black and brown
appears identical with
varieties we have obtained
from northern Manchuria
and Siberia.

Prof. Adachi is trying
to have the soy bean work
increased at this station
as he believes it will be
one of Japan's principal
sources of vegetable proteins.
Previously Akita Exp. Sta.
was testing soy beans quite
extensively but the govern-
ment increased the rice

work, and the sayse
work was transferred for
the most part to other
stations, principally
Hobkinds.

The varieties now grown
at the station look very
promising, and are very
heavy seed yielders. No
doubt they are adapted to
Southern Virginia and
southward.

Friday, Oct. 11, 1929

Akita, Japan.

Arrived at Akita Station about
8 A.M. where we met Dr.
Adachi. Cool and cloudy.
Soybeans

Time of planting, Previously
planted after rice planting.
Length of season of varieties
about 150 days. Previously
corn about 2nd week of June.
Prof. Adachi thought planting
2nd wk. of May would be best
on account of tolerance of
varieties. The station advises
1st to 2nd week of May.
Previously planting was
very thick and plants did
not do much.

Station now advocates
25 in. rows and with

plants 4-5 inches apart
in row and two plants
to hill. This method is
now increasing among
the farmers. Previously
the farmers obtained only
 $2\frac{1}{2}$ bush. per quarter of acre.

The rows are marked
with hoe. Planted by hand
mostly. After planting by
hand the beans are covered
with hoe about 1 in. deep.
When plants are 2-3 in.
high, the plants are cultivated.
When plants are also 7-8
in. high they are also
cultivated and weeded.
2nd cultivation in first
June or 12th of July. All
cultivation by hand. Only
two cultivations given.

Fertilizers: Only cow or
stable manure used, Applied
40-50 kam per quarter of
acre before planting.

Manure made into fertilizer
(manure) spread in the
furrow by hand. No
chemical fertilizers used.

Time of harvest. - The plants
are dead ripe when harvested
when the seed rattles in the
pods. The plants are harvested
the plants are pulled, roots
& all. The pods of the
being pulled are laid on
the ground for 2 or 3 days.
The plants (cured) are
then brought into the barn
or house, or piled outside
and covered to keep from

not.

The thrashing of the beans is continued until the rice harvest is through. All outside work is finished before time is taken to thresh the beans.

Thrashing, Thrashing mostly by beating out with flails, shovels, etc. No rollers used in Akita prefecture. Except pods, the straw is used for burning. The pods are used for feeding cattle. Diseases; Soybeans not much affected by insects or diseases. If sufficient fertilizer is added, the plants make such good growth that plants are little affected by diseases or insects.

Yields: Farmers obtained
about 2½ bus per quarter
acre. Now with earlier
planting and better methods
of planting 30 to 40 %
increased yields are obtained.

The Akita is a beautiful
yellow seed with pale
hilum, nearly round
Akita Sta. #27 is a beautiful
round yellow bean with
blackish brown conspicuous
hilum.

Dr. Adachi.

Studies on mottling.

Proceedings of Amer. Assoc.

Storage of beans. Beans are
placed in ^{straw} rice bags, weighing
about 17 kane (about 2-2½ bus)

Marketing - Farmers

sell & merchants in the
villages. The merchants
sell & the larger merchants

Farmers receive 17-18.
yen per 5 bush. depending
on the quality and also
on season. If rice is
high soy beans are high.
When rice is low, soy
bean prices are low.

Dr. Adachi's book in two
parts

I - Cultivation of Soy beans

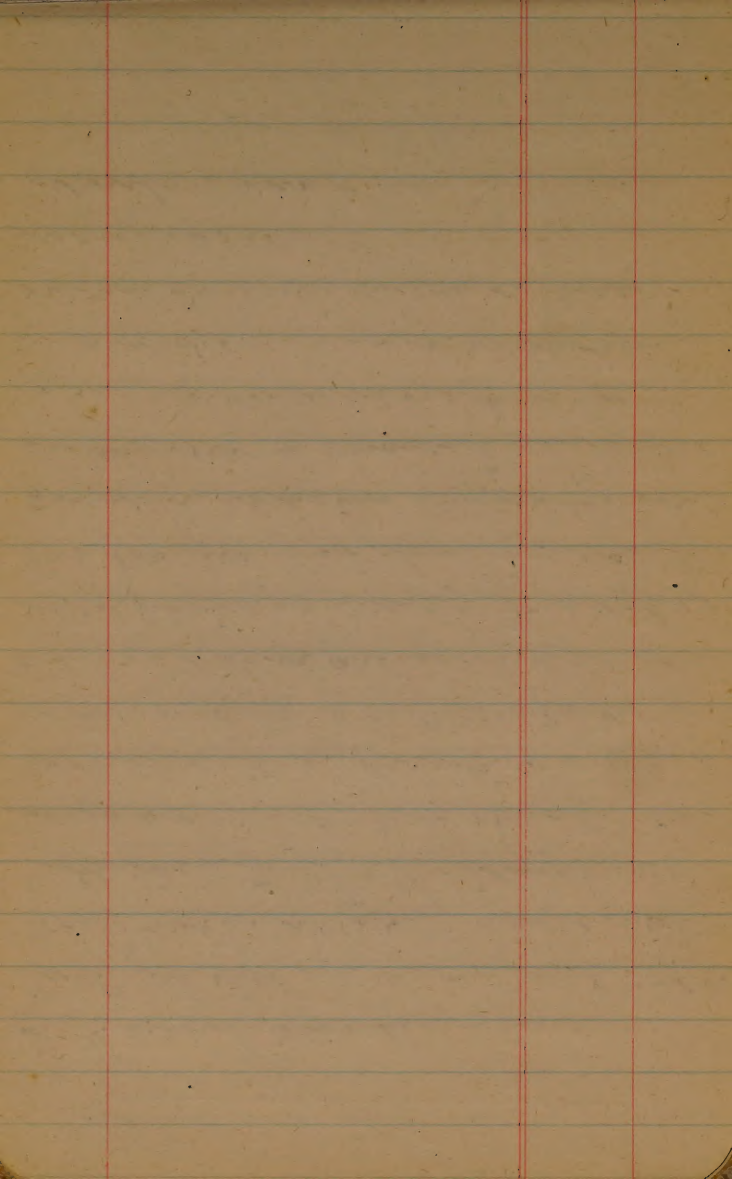
II - Manufacturing products

Chiaki Park, Akita, Japan

After bidding Dr. Adachi
good bye, we went to Chiaki
Park to gather seed of trees
and shrubs which we saw
Wednesday during our inspection
of the Park. Mr. Sugatake
went to get permission

to collect seed and found that
the Park belongs to the Prefecture.
Two men were sent along to
help us. Seed of several trees
and ornamentals were
collected. One shrub covered
with small red berries along
the branches appears to be a
very promising ornamental
for Christmas. The leaves
persist after the leaves have
fallen. Seed under ^{the}

After return to Am. seed
collected and soybean seed
given by Dr. Adachi were
given numbers and
written up.



Saturday, Oct. 12, 1929,

Cool and cloud

Left Akita 8.25 AM

arr. Yotsugaya 8.36 AM

Soybean field - rows 31 in.
apart with two plants ⁸⁻¹⁰
in, apart in the rows.

Took bus at 8.40 A.M. for the
village of Kawazoe where we went
to the village of Asao. This village
has 100 cho of upland and 40 to
given to soybean growing. On
account of dry conditions this
year and the demand of the
rice for the farmers' attention
soybeans were more or less
neglected.

Akita Horse Breeding Station

Soybeans cut for hay when
the plants start blooming.
Lespedeza bicolor (Bush clover)

used extensively for hay. This
is cut for hay when the
plants are in bloom.

Other hay crops at the station
are Red clover which makes
an excellent growth, Alsike
clover, orchard grass, timothy
oats and ryegrass, and
wild hay.

In Abita prefecture Kudzu
which grows wild in the
foothills and native, is
used very extensively for
hay. It is cut and then
cured by putting on the
roof of the farmhouse or
hung from the roof & cure.
In this prefecture Kudzu
hay is considered an
excellent hay for horses.

Ryegrass are used more
in the Abita prefecture.

than in any other prefecture
in Japan. The grain is
extensively used and also
the straw after threshing
out the seed. The Aoi and
Akasaya are the two varieties
principally grown. The
Akasaya variety is held the
best forage variety.

In this prefecture no
forage is especially grown
for there is an abundance
of wild grasses, bush clover
(*Lespedeza bicolor*), and
Hudzon. Red clover makes
an excellent growth but
is not grown by the farmers.

When feeding any kind
grain to horses, the beans
are soaked over night in

water before feeding. The
yellow, suckled canities are
used and at the station
the canities are mixed
for feeding. According to
age of horse, generally 4-5
lbs. of soaked beans per
horse per day, and to
a working horse 30% more
is added. The farm
the stallions are fed.
6-7 lbs. of soaked beans
per day. Dried hay of
grass also given. The
beans are fed instead
oats and are the only
grain fed.

The straw after threshing
and the beans is used
for bedding and is also
fed to horses.

Bus Yotengoya to Kawagoae —
3rd C. Wada to Akita —

Left Wada at 4.02 P.M.

Arr. Akita at 4.34 P.M.

Bus left Yotengoya at 8.40
A.M. and arrived at
Kawagoae at 9.00 A.M. We
went to the Village Agr. Assoc.
headquarters to find out
the location of soybean fields.
The secretary sent a man
with us and we walked 2 or
3 miles before coming to a
soybean growing area though
along the way we saw small
patches and some growing
about the edges of the rice
seed paddies.

The soybeans, except for
3 or 4 small patches still

had their leaves, being a from
50 - 75 % yellow and at least
3 weeks before ready for
harvest. The mature patches
were early sorts - one a brown-
pubescence and the other -
white pubescence. The latter
is called "Shirosaya" (White
Pod). Both are said to be
native varieties, that is grown
in this region for a number
of years. They were very prolific
and may be of value for our
northern conditions. Seed
was obtained of both sorts.
A few patches of compeas
were noted. All were of black
seed and a bunch variety,
quite upright. Compeas do
not do very well here.

Many fields of adzuki bean
were noted and for the most
part nearly mature. The

field had a variety with marbled red and black seed and leaves of a different shape than other adzuki varieties. Seed were gathered of the adzuki and the conpa.

The engineer of the ag. Assoc. met us here and took us several miles to the Akita Prefecture Horse Breeding Station on the table land. We passed through a hilly and also table land sections where we made several collections of seed of ornamentals - shrubs and vines.

At the horse breeding station we met the director who gave us full information concerning the various forage crops used for

feeding the horses. The station
is doing considerable work
with forage crops for horse
feeding. In several of the
fields we saw the only red
clover so far in the Abita
prefecture.

Lespedeza bicolor (Brush clover)
is cut for hay when in flower.
At the station they had plants
about 12 feet high. As yet the
seed is not quite mature.

Sunday, Oct. 13, 1929

Clear and cool.

Left Akita

8.25 AM

Arr. Fukushima

6.45 P.M.

Going out of Akita we entered into ^{an} extensive rice growing area, most of the rice being cut, some curing on poles and some on racks.

Patches of soybeans were noted here and there along the way. These were noticed fully mature, about 75% of the leaves were yellow and falling. In a few cases, about 50% of the leaves had fallen.

Around the edges of the rice paddies used for seed beds and containing water, soybeans were planted, and in a

few sections. The beans were planted around the paddies having rice.

As we approached Umagor soy bean fields became quite numerous and looked quite good. All were planted in rows, and in most cases about 50% of the leaves had fallen.

At least 95% of the rice has been cut and curing in bundles along the edges of the paddies, on racks, or on poles. In a few sections the rice had all been hauled in and placed in small round ricks in the farm-yards to await threshing. In other sections the cured rice was being hauled to the farms in carts and on horse backs.

三

Below Yuzawa we came to
rather an extensive persimmon
growing section. The trees
were well loaded with nicely
colored fruit.

The Yamagata prefecture grows
considerable persimmons,
apricots, and cherries. North
of the city Yamagata, numerous
plots of soybeans were seen,
most of which were mature.
The plants resembled our
blancher very much, being
brown pubescent plants and
stiff upright stems. Very
numerous persimmon trees
were noted along the way.

Kudzu has been noted
along the hillsides from
the time we left Utsunomiya.

Perseimons were noted
all along the way.

The country was very hilly
and mountainous all the
way to Finkushima

Monday, Oct. 14, 1929.

Cool and clear.

Left Fukushima 9.16 AM

Arr. Ueno Sta. Tokyo 3.00 PM

Exp. ticket Fukushima

To Ueno Sta. Tokyo.

Taxi - Ueno Sta. to hotel 1.00

Going out of Fukushima
the country is very mountainous.
In the valleys rice is still
raised. As we reached the
top of the ridge of Asakura.
From Fukushima numerous
fields of soybeans were
noted. Soybeans were also
planted around the edges
of the rice paddies more
than in the sections we
came through yesterday.
Many of the soybeans

more fully mature but
the fields for the most part
had all yellow leaves
and beginning to fall.

Between Fukushima and
Koriyama more soybean
fields were noted than in
all yesterday's travel. The
growth did not average over
two feet high, but the plants
appeared well-fruited.

Here soybean threshing
scene was noted. The plants
were placed in a large canvas
and the beans were being
beaten out with a club about
2 in. through and about
5 feet long. The plants were
piled in the center of the canvas.

Near Kuroisa, plants of
goose-neck sorghum were

noted about the edges of a soybean field and also about a mulberry patch.

As we approached Otsumoniya numerous soybean fields fully mature were noted.

Near this city the soil looks black and rich, and in addition to rice is devoted to considerable trucking. Many fields of sweet potatoes were noted and also Abdo.

Several fields of Hungarian or German millet were noted along the way. More or less dry land rice has been observed in this region. From Otsumoniya to is ~~more~~ less a

slightly rolling country.
More millet was noted
in this section than any
other part of Japan we
have been in.

Toward Kinki saylans
were noted quite generally
growing on the edges of the
rice paddies.

Arrived at Itoya Sta. at
3. P. M. Took a taxi to hotel
and found that our old
room 355 had been reserved
for us.

Tuesday, Oct. 13, 1929.

Went to office shortly after nine and started in writing up the notes on seed collected near Akita and also wrote up the notes and arranged seed received from the Hokkaido Expt. Sta. Kotoni, Hokkaido, just the day before we left Sapporo. (Oct. 7, 1929).

We received 35 samples, including soybeans, rice, adzuki beans, buckwheat, oats, wheat, barley, flax, and field peas.

Sufficient seed was written up and fixed up and written up

to send at least two
more parcels.

Arranged with Mr. Sugitaka
to take a trip to the Soybean
region about Ibrawa in
the Saitama Prefecture.

Wednesday, Oct. 16, 1929.

Cool and clear.

Left Surakuchio Sta. 8.30 A.M.

" Ueno Sta. 9.08 A.M.

Ar. Urawa 9.47 A.M.

Car fare Surakuchio to Urawa (3)

Left Urawa 11 12 A.M.

Ar. Kumagaya 12 P.M.

Car fare (3) Urawa & Kumagaya

Kumagaya

Left Kumagaya by bus

Ar. Tamai 12 45

Left at 8.30 A.M. for the
Saitama Exer. Sta. at Urawa
to look over the soybean
variety test and to learn
about the soybean situation
as to harvesting and threshing.

in Saitama Prefecture.

J. H. Beattie. Sweet Potato
varieties

Mr. T. Hasagawa.

Saitama Exp. Sta.

Urawa, Japan.

Varieties of sweet potatoes.

" " soybeans.

In the Saitama Prefecture
soybeans are harvested
about the 15-20th of Sept. In
this region the farmers
harvest the soybeans before
rice.

At Tama is the breeding
station for ^{wheat,} ^{adzuki bean,} ^{rice}
and all crops. The principal
varieties of soybeans are
1- Shirobana (White fl. No. 1).
2- Sennariki musume (Saitama
No. 1. (P. fl.))

3- Sanyonari. (Saitama No. 1)
(Bushy, white fl. P. fl.)

4- Amihadaka-Saitama #1,
(Satan-smooth or non-
hair), White fls.

Other varieties

Shirodaigo-Manchurian -
Used commonly for bean
curd in Tokyo Dist.

Hakubi-Manchurian.
Is best for soy sauce.

Time of planting, the
beginning of May. Blooming
season - July 8-20.

Mr. Morikisa Nomura.

Breeding Station

Tama, Japan.

Varieties of soybeans grown
in the U.S. also. Bulletin,
Orange series of adzuki beans.

Method of planting - Soybeans
are planted between the rows
of barley or wheat in May
before the grain is
harvested. The furrows are
made with hoe by hand.
All soybeans are planted
between other crops.

Price of soybeans. A rice
straw each - 140 lbs. sells
for 7 1/2 yens.

Soybeans in Hondo are
planted between other
crops, especially between
barley and wheat - early
varieties of these grains.
Wheat and barley yield
about 3 bushels per acre.
Barley yields 2 bushels 4 to
per acre. Will later

varieties small crops of
soybeans are obtained.
Thus early varieties of
grains must be used to
obtain best yields of soybeans.
yields of soybeans.

8-12 to ($1\frac{1}{2}$ bu) to the
 $\frac{1}{4}$ acre. Farmers de-
pending more on soybeans
as sources of barley and
wheat are too so early
varieties of these grains
are used to obtain large
yields of soybeans.

Fertilizers for soybeans.
Cow manure - about
30 tons (10 tons) to the $\frac{1}{4}$
acre; acid phosphate
 $4\frac{1}{2}$ tons (10 tons) to the

$\frac{1}{4}$ acre; straw ashes
15 kan (10 lb) per $\frac{1}{4}$ acre.
Straw ashes are made
from rice, wheat, and
barley straws, ^{and also soybean} & other straws.

After fertilizer is made
a mulch $1\frac{1}{2}$ in. deep, the
three fertilizers are
mixed together. The
mixed fertilizer is
broadcast by hand
over the rows. Right
after the seed is sown
by hand. The seed is
placed about 7-8 in.
apart in row - 2 plants
or seed to hill.

Amount of seed 3 to 5
sho [$\frac{1}{10}$ to (to = $\frac{1}{2}$ bu)]
per $\frac{1}{4}$ acre - varying
according to size of seed

after planting in the furrow the seed is covered with hoe.

width of row - 26 inches.

The plants are pulled when fully mature. After laying in the field for a day the plants are brought to the farm yard, ~~and left for ten days~~ and the roots are then cut off with choppers, dried and then burned. The plants are left until thoroughly dried out and then are flailed out. The seed is then cleaned with mill. The straw left after thrashing is burned.

The soybeans are weeded
and cultivated three
times. After harvesting
the grain the grain row
is plowed up with a single
plow drawn by cow.

Next cultivation one
side of row is hoed by
hand and then the
other side is hoed. The
last cultivation both
sides are hoed. When
hoed both sides the soil
is brought up to cover
the part of the stems,
a sort of ridge. All
cultivation is done
before the plants are
in flower.

The soybean varieties
planted about the rice

seed beds are green
sanded, sorts that are
used for making soy-
bean flour which is
used by the farmers'
family.

Soybeans are not
planted as extensively
on boundary of paddies
fields as formerly. The
stature people advise
against it as the soy-
beans plants harbor
insects which are
injurious to the rice.

Soybean varieties
show great variation
when planted on flat
low land and in the

mountain land. The
low land the plants make
a good growth but are
late and give but little
good seed. The seed pods
make good growth and
the seed appears blasted
much like conditions
in southern California,
Miss. and La.

Insects: Chingo - a
sort of corn borer - eats
~~through the pods and~~
~~eats the seeds the leaves.~~
The pod borer does very
little damage.

Purple spot of seed
is very bad during wet
seasons.

The Chingo eats the
leaves of the plants when
the plants are 4-5 in. high

This eating of the young shoots causes the plants to branch more.

To protect from attack of Chirizo is by spraying with nicotine and nitric acid. This is used comes early in the season when the plants are 4-5 inches high.

Storage - The seed after cleaning is placed in ~~red~~ ^{straw} sacks holding about 100 lbs. These sacks are piled at right angles to each other.

Marketing: More than 50% of crop sold to merchants in the

villages. The rest is used
in making miso, Soy
sauce in the homes.
Recently Manchurian
soy beans are being brought
in and the farmers
do not grow soy beans
as often as they
used to because of low
prices received.

Hses - Used in ma-
niss and soy sauce,
in the home. Also used
for cooking in the home,
boiling with sugar.
Especially the black seeded
varieties. Flour is also
made and is generally
used in cooking with
rice paste. Flour used
like cooking chops.

Rice paste is roasted,
then digested in hot water,
then covered with
roasted soy bean flour.
Sometimes salt or sugar
is put on the flour.

Rice cakes with soy bean
flour are called:

"Abekawa"

In Amiya and
Kumagawa are soy bean
flour mills producing
about 4000 sacks per
year. "Sokoshin" variety
of soy bean used in
making soy bean flour.
Said to have a very good
flavor and is especially
desired by the millers.

This variety is grown
especially in this pre-
fecture.

Soybean flour ^{most} generally
used in making
"Aburamono" by farmers
and also in cities, also
winter by farmers and
in cities and villages
the year round.

Mr. Sakaki - Mr.
Tamura's wife is
Mr. Sakaki's sister.

Left Tamai	4.15	P.M.
Ar. Kimagaya	4.25	P.M.
Lf. "	5.25	P.M.
Ar. Shinjuku Tokyo	7.30	P.M.
Bus. fare Tamai to	20	20
Kimigawa		
RR. fare Kimigawa		
to Shinjuku Sta. Tokyo	1	03
Supper Products 2 bowls	2	00

at Kumagaya we stopped
at a soybean flour store
where they make bean
flour and a confection
called "Gokahō", which
is a small roll ~~to~~
the inside of which is a
glutinous rice - steamed
or puffed flour - surrounded
by sort of blanket of the
roasted soybean flour.
The Kumagaya is noted
for this production. It
is put up in small
paste board packages and
in sealed tins.

2 tins at one yen $\$ 2.00$
each were bought for
the soybean exhibit

The store people also gave
a sample of flour used
in making the confection.

Health Coffee - Manufactured
in Dairen - Soybean Coffee
Taizantou, Dairen.

Firm name - Kami or Shin.

Hardened Soybean Oil

By Dairen Oils & Fats

Industrial Co., Ltd.

Dairen, Manchuria.

Different kinds of hard
soap from soybean oil.

Frying oil

Salad oil

Different kinds of Frying
oil, salad by Nisshin Oil
Mills Co. Dairen.

Thursday - Oct 17, 1929

Cloudy - mild:

In morning went to dentist and then went to office.

Wrote up seed samples and some soybean food product samples.

Friday, Oct. 18, 1929

Cool and clear.

Left Churabacho Sta. Tokyo at	
7:10 AM. Arr. Ueno Sta. 7:20 AM.	
Left Ueno Sta.	7:35 AM.
Arr. Kojimachya	9:25 AM.
Lo. "	9:28 AM.
Ar. Kagemori	10:45 AM.
R.R. fare Churabacho Sta. to	
Kagemori (3 rd C)	¥ 2.16

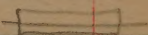
Milkery, for bean cake.

From Kojimachya to
Kagemori by electric but
we passed through low
land for a considerable
distance and gradually
worked into the hills
and table land and mountains.
This region is given
largely to silk culture.

In the low land soybeans
had been harvested but
as we came into the
table and upper land in
we saw many fields of
soybeans, about 80% with
leaves off and about ready
to harvest and 60% from
dinner all on but just beginning
to turn yellow to fields with
leaves $\frac{1}{4}$ - $\frac{3}{4}$ fallen. On this
table land we saw only
two fields cut and the
plants shocked for curing.
The cut plants were
shocked with roots upward
and four to five plants per
shock. Pictures were
taken of a field of plants
shocked. After the plants are
cured, the roots are chopped
off and used as feed.

Arrived at Kagemori at
10.45 A.M. Went at once to
the Village Agr. Society to
obtain information re
soybeans in this region.
The man in charge advised
us that it was a little
early for harvest which
would come in about a
week or ten days. He was
told that three varieties
were grown in this section
and all of Manchurian
origin. The society
promised to send us
seed of these three varieties.

We decided to walk
down two or three stations
and see if we could see

any harvesting scene
and botanize along the
way. As we went through
the village we saw a bean-
curd store and stopped to
watch the slicing and
frying of bean curd. The
proprietor was cutting a
large slab of bean curd into
small pieces about 10 in
by 3 inches and about 1 1/2
in thick. These small slices
were sliced in two 
and then fried in
mustard oil.

Motion pictures were
taken outside of the man
slicing bean curd and
still pictures were taken
also. The proprietor gave us
samples of two varieties
of soybeans that he uses

in making bean curd
(D & M Nos. 1604 and 1605,

When told that we were
looking for soybean harvest-
ing pictures he said his
father had a field of beans
ready to harvest and
that he would harvest
and shoot some plants
for our pictures. Still and
motion pictures were taken
of the harvesting and shucking.

In the region about
Kagemori soybean for
seed production is
carried on very extensively.
Seed samples were gathered
from four fields. Four of
the samples were yellow

seed and the plants had
tawny pubescence. The
other sample had greenish
yellow seed and the plants
had gray pubescence.

The seed of all looked very
nice and are used for
food. The bean curd man
said he obtained the
beans from this region
for making his bean curd.

We found evidence of
the pod borer moth in all
fields, more in some
fields than others. In
one field the injury was
very bad and the pods
appeared all blasted.

Two or three fields were
noted of soybeans with
buckwheat planted
between the soybeans

rows. The buckwheat is
now in bloom and is
used for green manure.
Buckwheat was also
noted between the rows
of mulberry trees and is
to be turned under for
green manure. Corn and
sorghum stalks were
noticed placed lengthwise
between the mulberry
rows to be turned under
for green manure.

Along the way from
Kinugaya to Hagemori
large numbers of sorghum
cobs were noticed piled
up on the station plat-
forms. We were told that

These cakes were imported
from Manchuria and
are made into meal
which is used as a
fertilizer for the mulberry
trees.

Mailed Sept. Expense
account to Washington,
D.C.

Postage	42 sen
Taxi & Consulate	1.00

Saturday, Oct. 19, 1929

Raining and cool in the morning. First went to the dentist, Dr. Hidayoshi near the Imperial Hotel and who is a graduate of the University of Penna.

Then went to bank (N.Y. Nat.) to make deposit of checks and found yen exchange to be $48\frac{3}{8}$. Also drew out money for Korea trip.

Went to office after lunch and developed motion picture reel # 28.

Came back to hotel and obtained tickets for Korea trip from the Japanese Tourist Bureau in the Imperial Hotel.

In the evening wrote

up seeds on soy-bean
and collected from farmers'
fields in the vicinity of
Kagemori.

Wrote up some official
correspondence.

Monday, Oct. 21, 1929.

Cold and clear - Arose early and finished packing for our trip to Korea.

Left hotel at 9.30 A.M. for Tokyo station.

Left Tokyo station 10. A.M.

Arr. Shimonoeski

R.R. fare Tokyo Sta. to ^{Seoul} Keijo, Korea (2) 39 21

Exp. fare Tokyo to Shimonoeski (2) 5 00

Loung. berth (2) Tokyo Sta. Tokyo to Shimonoeski 4 50

Taxi fare hotel to Tokyo Sta. Tokyo 1 00

Handling baggage, Tokyo 25

Postage - official 20

After leaving Yokohama considerable mud was noted along the right of way. In the sections from Yokohama to Kōm it was noted

that very little rice has been cut.

From Narmazin for many miles considerable tea growing was noted. The tea plants were grown in rows and looked like clipped hedges - $2\frac{1}{2}$ - 3 ft. high.

Hamanatsu which we reached at 3.20 P. M. is noted for its Natto products. At the station we bought 2 boxes of Hamanatto which we thought was salted but upon opening a box found that it was sugared Natto. Apparently the ~~fermented~~ Natto beans had been boiled in syrup and then sugared. We found them very good.

at the station many people were buying boxes

of these sugared Natto
beans. A box holding
about $\frac{1}{2}$ lb. sells 25 sen.

An effort should be made
to visit Harumatsu to
see the manufacture of these
products or an effort made
to obtain both the salted
and sugared Natto products.

Considerable truckman
was noted along the way
especially in the hilly
land.

Soybeans are grown
very extensively along the
edges of the rice paddies.
The practice is carried
much more through the
rice sections we have

seen today than in
northern and northeastern
Japan.

Tuesday, Oct. 22, 1929

Awoke about 7 A.M. and had breakfast about 7:30. For breakfast on the train had oatmeal, toast, ham, and eggs, coffee, and fruit. The price was 90 sen.

Arrived at Shinmonoseki 8:45 AM

Along the way to Shinmonoseki considerable bridge was noted.

All along the way no soybean fields were noted in the lowlands but soybeans were noted planted along the edges of the rice paddies.

It was noted on the upland and along the hill-sides soybeans were grown in small fields to their schas. No soybeans were

noticed harvested. The plants
had $1\frac{1}{2}$ - $3\frac{1}{4}$ of the leaves yellow
and none were noted fully
mature.

Very little rice was noted
harvested. On a few cases the
rice was cut and was being
threshed out with foot-power
threshing machines.

Arrived at Shinonoseki
at 8.45 A.M. and had our
baggage transferred to the
ferry boats for Fusan. As the
boat did not leave until
10.30 A.M. we walked about
the streets which we found
quite narrow. At the fruit
stores apples, grapes, and
persimmons. There were many
varieties of the latter. Formerly
grape-fruit we saw in abundance
and it had pink flesh. It

has a very thick skin and the flesh is quite dry.

Along one of the streets we saw many people selling various sorts of vegetables and other food products.

Many sorts of bean curd were noted.

1. Fresh bean curd in small tubs of water.
2. Small blocks of bean curd slightly brown on top which look as though they might have been slightly roasted.
3. Freshly frozen bean curd.
4. Dry frozen bean curd.
5. Triangle pieces of bean curd fried in oil.
6. Rolls of fried bean curd.

7. Balls of the ground bean material left over from making bean curd. These balls are said to be used in soups.

On the boat we were questioned by a secret service man as to our own, etc.

We left for Fusan on the 10.30 A. M. boat and

arrived at Fusan, Korea, 6.30 PM

Porter handling luggage at Shinonoseki, Japan 50

Porter handling luggage at Fusan, Fusan, Korea 50

Lunar bath from Fusan to Keigo, Korea (2nd C) 4

Kara-bean material left over from making bean curd. This is also called Kirazu or Unohana. It is used in several

cooking. Is especially good for soups and for making stuffing or dressing for stuffing fish and vegetables. Also used in making Japanese salads, the meal being sprinkled over the salad. The meal is also used to some extent for cattle feed.

Left at 9.20 P.M. on a sleeper for Seoul or Keijo, Korea. The train was bound for Mukden and consisted of standard sleepers much like our American sleepers but much more commodious. The berths were wider and there was more room and

greater height between the
upper and lower berths -
It was the first sleeper we
have been on since in Japan.
The end of our car was
curtained off and the people
merely used the seats. It
was a beautiful moonlight
night.

Wednesday, Oct. 23, 1929

Cold and clear. Awoke early and watched the scenery along the way. There was a very heavy white frost. About half the rice has been cut and is left in bundles along the edges of the rice paddies or in the paddy itself.

Sorghum is cultivated
Soybean Varnicelli

Kanawando-Daidoko - Wren
Firm Yamato Shoji
Selling stoves - Miji

Moji Uematsueko.

Soybean Flour - White
Brown

White soybean - Fobon

Kokaido Kaimagun - N

Genosuke Sakakibara (Firm)

Soy Sauce - Large exhibit

Miso.

School exhibits

Koritsufutengakko, Korea

Soybean with long thin hilum

Tantalus - waterproof cement.

Soy sauce -

Dried frozen bean curd.

We arrived at Keijo, Korea, at 8.55 A.M. and went at once to the Chosen Hotel by taxi. We arranged for rooms and obtained a double room for 9 yen per day on European plan. The American plan for the room would have been 16 yen a day for each. We tried tiffin at noon which was 2.50 yen each. After

Afternoon we went up
to the exhibition grounds
to view the agricultural
products. The grounds
were extensive and there
were many exhibit
buildings. We went
through several and
saw wonderful displays
of the products and
industries of Japan,
such as food products,
pottery, lacquer, silks,
linen, chinaware, needle
work, paintings, bronze,
silver, and gold work,
and exhibits of various
schools of Korea and of
the different provinces
or prefectures of Japan.

and Korea.

Extensive exhibits of soy sauce were shown in many places and there represented a large variety of brands.

Several varieties of brands of bean vermicelli were also noted. Varieties of soy beans were seen in the various school exhibits. In one school exhibit the black and white soy bean was noted. This variety has been obtained from Korea under the name of "Widow's Bean".

After getting settled in the morning we all went to visit the American

Consulate and met Mr. Stearns, Vice-Consul whom Mr. Donett met in North Manchuria 3 years ago. We had a talk with Mr. Stearns regarding our work in Korea and he promised to help us in every way possible. He gave us commercial maps of Korea. We were invited to dinner Sat. night at Mr. Stearns home.

After our visit to the Consulate we walked back to the hotel where we had tiffin. We found that it was a most excellent meal & rather costly as

it was 2.50 yen each,

after returning from the
exhibition grounds we
looked for a good lunch
place and found a very
good place about 3 blocks
from the hotel and the
price very reasonable.

Official postage	20
Entrance fee to Exhibition	30
St. car fare, Keijo	.05
Bus fare Sta. to hotel	50

Thursday, Oct. 24, 1929

Keijo, Korea.

Cool and clear. Arose early
and left for exhibition
grounds about 9 A.M.
Car fare to grounds
" " from "

Forage

Baler bundles

Lespedeza bicolor - Bush clover
Vetch

Wild hay

Alfalfa

Kudzu roots

1-6 ft - 8 in in diameter

2-5 " - 6 " " "

Kudzu vine - like rope.

Mung bean - Very large collection
of varieties

Adzuki - Red clay, maroon

black, bicolored (red & white)

gray & olive,

Soybeans. Very large collection
of varieties. Large yellow
seeded varieties. Some
green, some black. 1 bluish.
1 brown & white on pattern
of the widener bean. Seed
of yellows represent quite
a number of varieties.

Green Manure -

Common vetch

Hairy vetch

Alfalfa

Chinese milk vetch

Soybeans

Field Peas. Collection of seed

Millet - Collection of seed

Should send Mr. Stevens

of the Consulate to obtain

small sample of seed

of all varieties of soybeans

Mung beans, and adzuki
beans on exhibit.

Fool - Vitamins

Soybeans - Vitamin B

- " E

Soybean sprouts " B

Many buildings were
visited during the day.

The Soghalin Island
building showed some
farm crops such as peas,
soybeans, adzuki beans,
flax, and field beans.
Six bottles of soybean
seed and 3 bundles of
plants were noted. An
effort should be made
to obtain these through
Dr. Kanasi, formerly director
of the Tokachi Station at

Altshiro and who is to
have charge of the Saghalien
Island station. Request
for information as to
the amount and where-
abouts of the growth of
soybeans on this island.

The exhibit of soybean
seed in the agriculture
hall was the largest and
finest yet seen of soybean
seed. There must have
been at least 300 or more
samples of seed on ex-
hibit. There were some
excellent yellow seeded
varieties, a few greenish
yellow & black samples
were noted. An effort
will be made to obtain
small samples of these

beans through our
American Consulate of the
Exhibition people.

On the South Manchurian
Ry. building much attention
was given to soy beans
and their products. Many
samples of bean were
noted and some excellent
photographs seen. One
one of the booths was shown
an oil press room with
a wax figure showing
or smoothing up the
edges of a round bean
cake just taken from
the press.

Many samples were
shown of different
forms of soy bean oil

by different oil mills
at Dairen. There was
an excellent piece of
work made out of hardened
or hydrogenated soybean
oil. Several brands of
frying oil and salad
oil from soybean oil
were on exhibition. There
was also boxes of Health
Coffee made from the
soybean and manufactured
from the soybean.

Health Coffee

Taiyantan. Dairen

Name of Firm - Kanis or Shin.

Hardened or Hydrogenated
Soybean Oil.

Dairen Oils and Fats
Industrial Co., Ltd.

Dairen "Manchurian

Various brands of
hard soap for the bath
and cleansing purposes
were noted and made by
Dairen, Manchurian firms.

Various brands of
Frying oil and Salad
oil were on display and
manufactured by the
Kisshin Oil Mills Co.,
Dairen, Manchuria

Extra fee & Ext. gr.
St. car fare —

30

05

05

Friday, Oct. 25, 1929.
Keijo, Korea.
R. T. Coit

Lutz. (Park's friend).
Keijo, Korea
B. M. Burdick. (Clark's friend).
Keijo, Korea.

In the morning about 7 we
went to the Keijo market to
look over the fruits, vegetables
and other products. The market
is back from the main street in
several alleys and is the
most interesting market
I have seen since being
in the orient.

Farmers were constantly
coming with their
products. The Korean
farmers with their

products on their backs.

Some of the finest radishes were seen & have yet noted both of the long and globular types. Large quantities of soy bean sprouts were noted, and much less of mung bean sprouts. The soy bean sprouts were apparently of the smaller seeded types. The following is a list of vegetables noted.

- 1- Soy bean sprouts
- 2- Mung bean sprouts
- 3- Green onions - 2 varieties.
- 4- Irish potatoes - different varieties.
- 5- Sweet potatoes - different varieties
- 6- Lotus roots

7. Dioscorea
8. Dasheen
9. Boranist green pods.
10. String beans.
11. Water celery - Young plants
12. Butter bar.
13. Water chestnut.
14. Chinese cabbage -
several varieties
15. Turnips.
16. Mustard - Large plants
with thick stems.
17. Tomatoes - rather
small
18. Husk Tomatoes.
19. Japanese Spinach
20. Squash. Several varieties
21. Cucumbers - many
varieties
22. Satsuma oranges.

- 23 = Apples - Many excellent looking varieties and highly colored. The Korean apples tasted so far are superior in flavor to the main island and Hokkaido apples.
24. Pears - Many varieties
25. Grapes.
- 26 - Peppers - Greenish type.
- 27 - Edible acorns.
- 28 - Many species of mushrooms. Some very large types.
29. Chestnuts - many varieties
30. Ginger root
31. Peanuts.

In parts of the market,
the different vegetables
were being auctioned
off.

In one section we
found quite a collection
of wholesale seed,
which included many
varieties of soybeans,
mung beans, and
adzuki beans. Many
of the soybeans were
not included in the
collections observed at
the Korean Fair.

The soybean sprouts
were rather long,
at least 4-5 in., and
were older than the
mung bean sprouts.

About 9.30 A.M. we
went to the American
Consulate where we saw
Mr. Stevens. We made
arrangements with
him to obtain if
possible small samples
of seed of the large
collection of varieties
of soybeans, mellees,
running beans, adzuki
beans, sorghums, and
buckwheat on exhibit
at the Korean affair.

We also spent some
time with the Consul,
Mr. Miller, who is a
graduate of Cornell, 1887.
We discussed agricultural
affairs in general. He
promised us full aid

in the collections of
seed desired from the
Korean Fair.

After lunch we went
to the Botanic Gardens
located near the out-
skirts of the city and
which were the grounds
of the Korean Emperor.
We are told that the
Emperor of Korea is now
a member of the Japanese
Imperial Family
and resides in Tokyo.
The palace and parts
of the grounds are still
held for the Emperor
and only a special
permit will allow
entrance.

Several of the Imperial
houses now given up
for museums were
visited and contained
pottery and other
articles belonging to the
Imperial family.

A visit through the
grounds revealed many
very interesting plants
and trees.

Four types or species
of *Lorsedza* were noted.
One species, forming
a large shrub, ~~was~~
used for ornamental
purposes. The shrubs
are 10-15 feet high and
the stems or trunks of
some at least 3 in.
through. The seed of this

species is not quite
mature.

Another species
growing rather
abundantly was from
3-5 feet high and not
woody. Seed fully
mature. When in flower
this species should
make as good hay
as alfalfa.

A tree-growing species
much taller and
more branched than
the Japanese clover. Seed
has been mature for
some time.

A Japanese type, tree
growing.

White clover was noted
in many places about
the park.

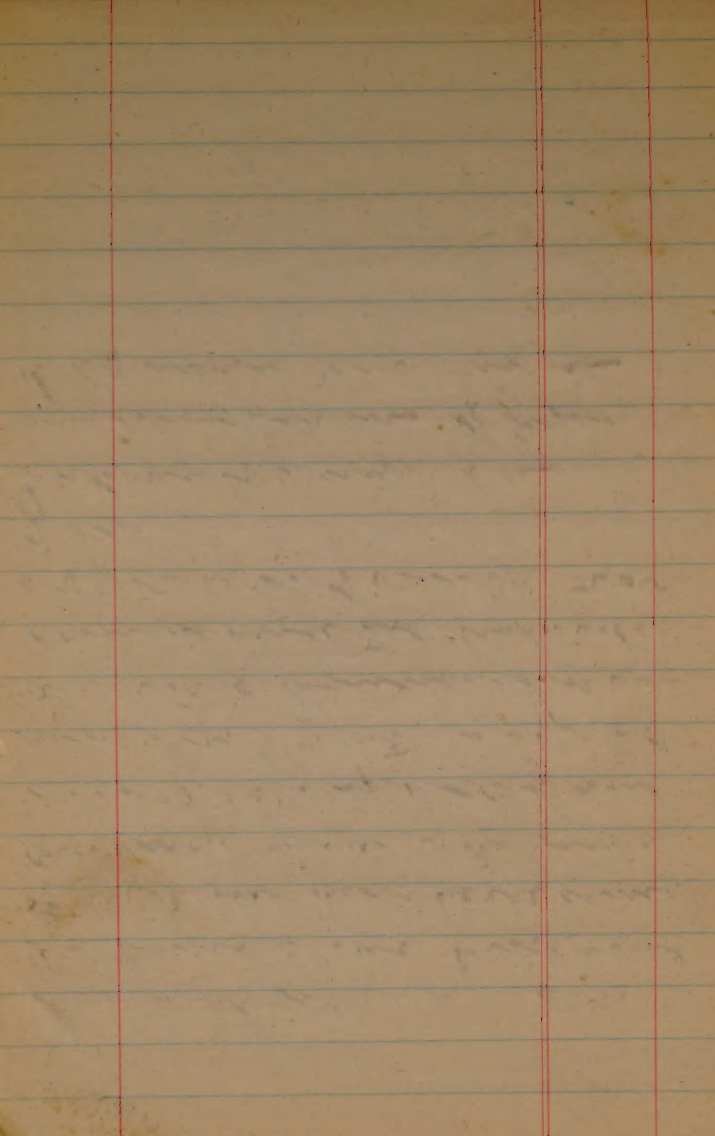
In one section a
few red clover plants
were noted. The plants
were quite healthy
but only a few flowers
were found. A few red
of a very deep purple
color were found.

The Botanic Garden closed
at 4 P.M. so we went to
visit the Chosen Imperial
Shrine (Meiji) in another
part of the City. The shrine
is called the "Spirit of
Chosen" and is supposed
to contain the spirit of
the Meiji Emperor.

It is situated at the
top of a very steep hill.

Stone steps led up to the shrine buildings and stone lanterns were along the way at each landing. Over 1200 steps were counted leading up to the top. The shrine buildings and steps were completed Oct. 15, 1926 at a cost of over 2,000,000 yen.

Along the edge of the railing plants of Japanese begonia were noted



Saturday, Dec. 26, 1924

Keijo, Korea.

Cool and clear. Left about
9.30 A.M. for the Imperial
Botanic garden to gather
seed of plants noted in
our visit yesterday. At
the office building we
found that we must
not only submit a list
of seed and plants wanted
but also put in a written
application and this
to be acted upon by the
office in the Korean
Imperial Household.
Being advised of our
hurry, they rushed regarding
the matter and about
1 P.M. we were given a
man (gardener) to go

with us to collect the seed.

First collected seed of the Korean Tree clover (*Lespedeza* sp.), much like Japanese Bush clover but grows more like a small tree. The plants ranged from 10-16 ft. high and from 1-2 in. in diameter. They are used as ornamentals. At this time the seed is just beginning to mature but the leaves have been frozen by heavy frost.

Next gathered seed of another *Lespedeza* sp. much like our Korean *Lespedeza*. The plants were being cut and it was the only patch of these species that we observed in the grounds. We were able to get a fairly good bunch of seed.

Seed was collected.

of several ornaments
such as Enonymus,
tree ferns, and several
trees.

The first opportunity of
seeing the Zoo was given
in our wanderings around
after noon. Rather a large
collection of Korean native
animals and birds were
noted. Some very beautiful
specimens of the Korean
(Bengal) tiger were seen.
In addition to the
native fauna there were
others such as elephants,
hippopotamus, lions,
camels, and other
animals found in

The Asiatic main land
island in the South Sea
Islands and Australia.
It is one of the best
zoological collections I
have seen thus far in
the Orient.

Monday, Oct. 28, 1929.

Keijo, Korea.

Cool and clear.

About 10 A.M. went to call on Chief of the Chosen Agr. Dept. in the Chosen Government Building with regard to introduction at Chosen Rys. Sta. at Suifu. We were advised by the secretary Mr. Natsu that not much any more work was being carried on at this station but they would give us a letter of introduction.

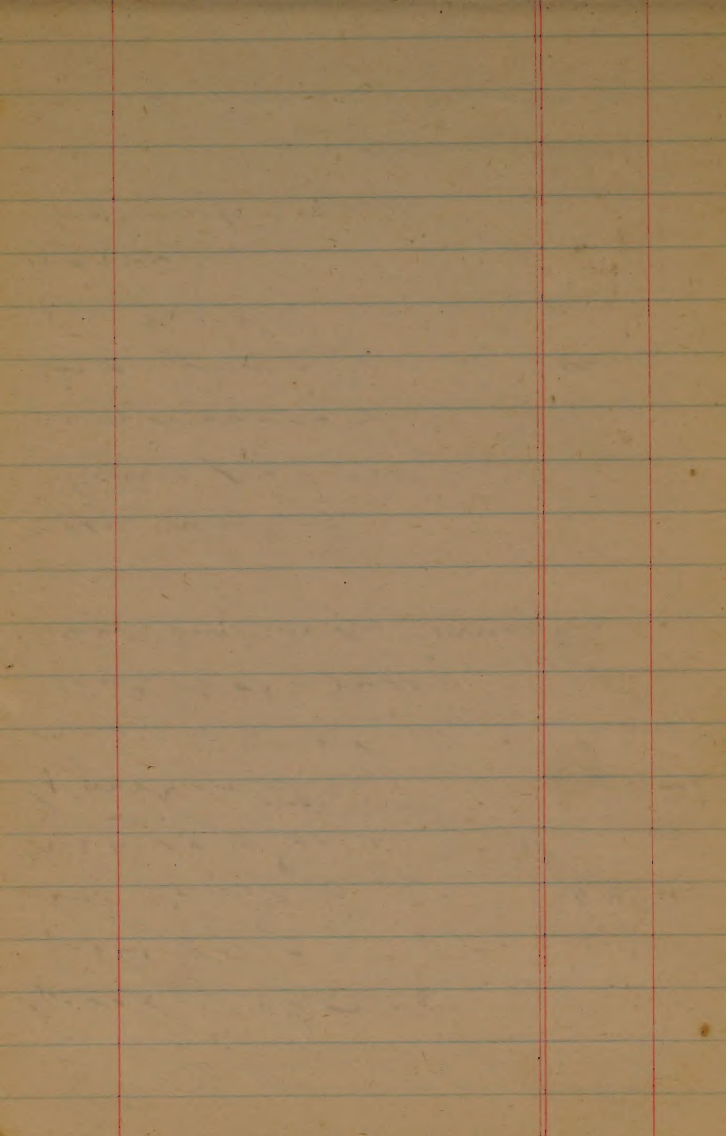
On our way back from the building we met Mr. Stevens, Vice Consul of the American Consulate.

who had us return to
take up the matter of
procuring samples of
soybeans, mung beans, and
adzuki beans on exhibition
at the Korean Fair now
being held. The commissioner
in charge of the agricultural
exhibits advised us that
he would endeavor to
obtain for us the samples
desired and send them
as soon as the fair was
over.

After lunch we went
to the Korean Farmers'
market near the East
gate of the city to obtain
seed samples of various
Korean crops. Not all
of the seed places were

open but we purchased
a number of samples
and then went to the
market near the center
of town where more seed
samples were obtained.
Small samples of the
following were purchased.

Soybeans	38
Adzuki beans	
Mung beans	
Sorghums	
Cornmeal	2
Millet	2
Rice beans	1
Buckwheat	1



Left Suigen 5.24 P.M.
Ar. Keijo 6.35 P.M.

Tuesday. Oct. 29, 1929

Suigen. Chosen,
Left Keijo 3rd C 7.30 A.M.
Ar. Suigen 8.45 A.M.
Fare Keijo to Suigen (3rd C) .65
Suigen to Keijo (2nd C) 1.21
Hyland rotation

- 1 - Spring - millet - In autumn
plant wheat or barley
- 2 - Beans. Soy - adzuki - mung bean.

Green manure

Astragalus & vetch used as a
green manure in southern
Korea - Generally rice follows
rice. Expt. Sta. advises green
manures.

Astragalus sown in Aug. or
Sept. at Keijo ~~sown~~ before
Sept. 5. Turned under in
May.

Hany. Castor bean. green manure
(mung, adzuki (small seed), soybeans,
hairy vetch, mung beans),

In Korea barley is one of
principal food crops. In
Southern Korea barley follows
rice in paddy.

In Korea for cattle feed
Kao-liang, millet and other
feeds are first good before
giving to cattle. The cattle
feed is served warm. Soybean
seed is also fed cattle
mixed with the straw of
other crops which the
Koreans feed their animals.

Rice cultivated in the
southern half. 70% of native
varieties displaced by Japanese
varieties.

Barley grown mostly in
the southern part on

the rice paddies.

Soybeans - are grown quite generally over entire Korea.

Millet - grown especially in the central part.

Cotton - native cotton about Keijo district. American varieties in the southern part.

Legume pod tree occurs in two places in Korea.

Oats grown to quite an extent in northern Korea and used not only as a cereal but used as rice is.

Black & white radish used especially for cooking. Is said to have an expensive

Thin skin which makes it desirable.

Have on display in the exhibit hall over 624 varieties are on aphids in small bottles.

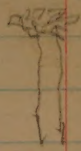
Arriving at Suifu we walked to the Exp. Sta. (near which is located the Imperial University of Chosen. The Experiment Sta. occupies rather extensive grounds and in addition to field crops carries on work with dairy crops, hogs, and poultry.

We first called on Dr. Nagai expert plant breeder and who has done and is doing considerable work with soybean breeding. We were shown an exhibit of soybean varieties (the seed and

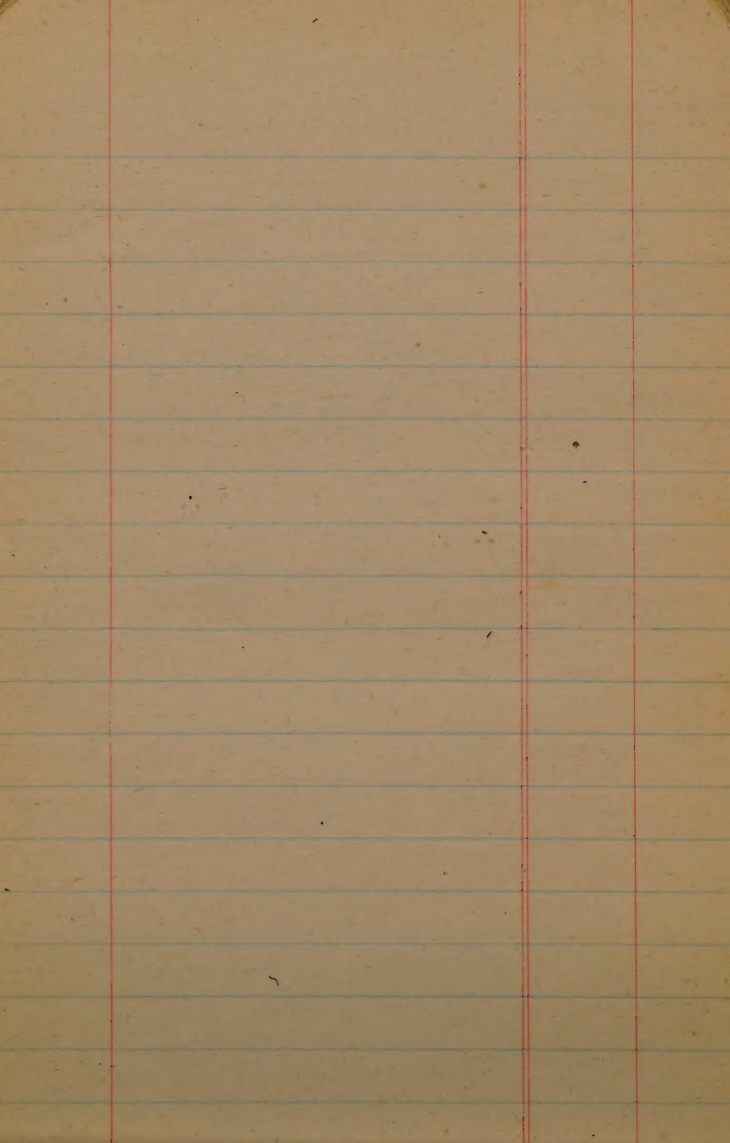
pod in a 6 in. bottle), representing
over 600 distinct sorts.

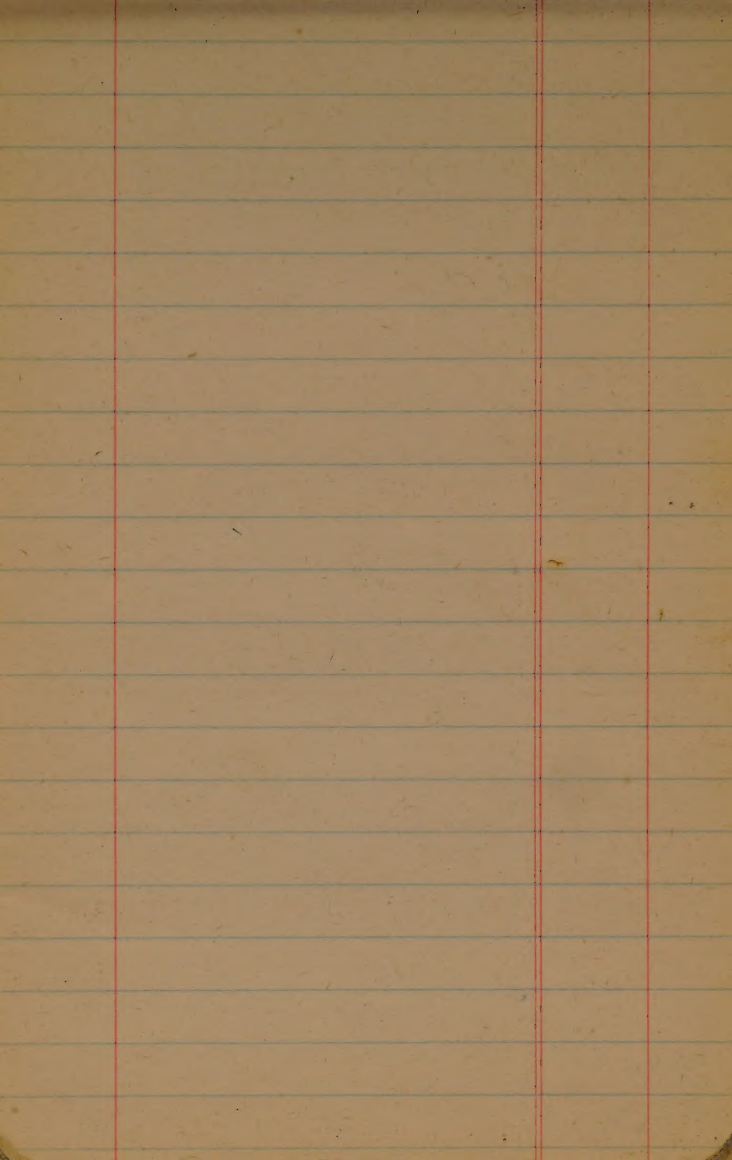
They were then taken out over the
experimental plots. The soybeans
had all been harvested and
women were threshing out seed
from individual plants. The pods
were picked off the plants and
shelled out, a pod and piece
of the stem being put in with
each sample of seed.

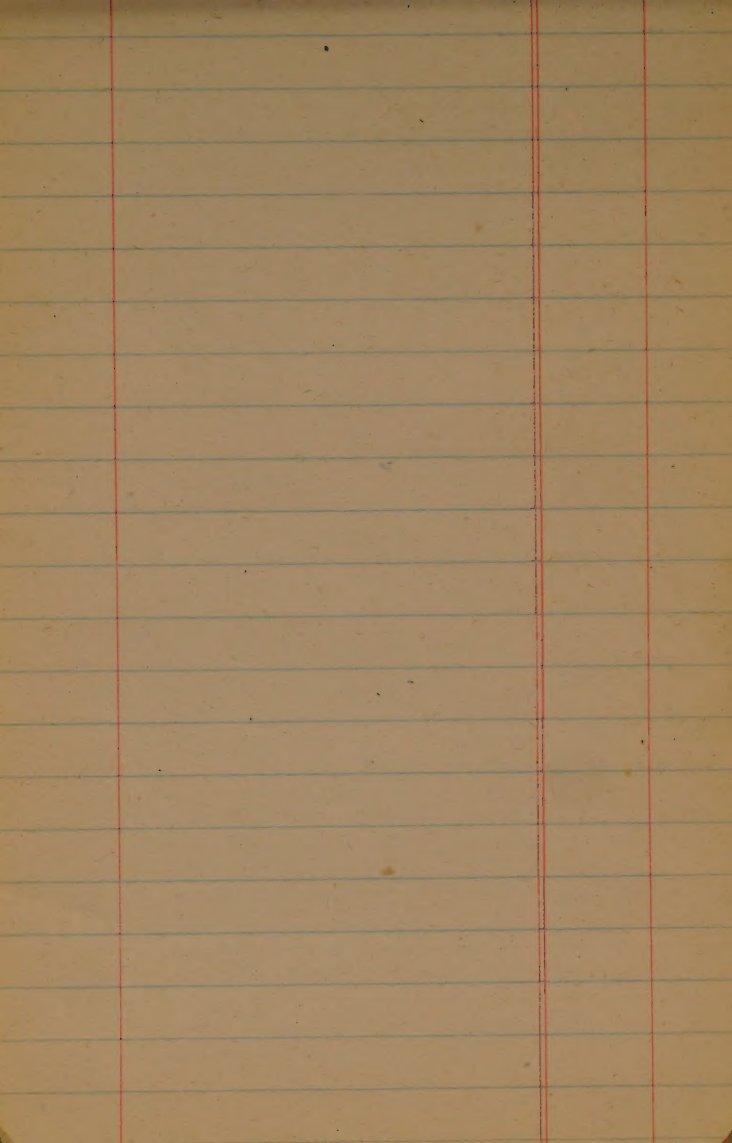
One of the most interesting things
in the soybean group was
the fasciated soybeans. There
were two varieties both of which
are said to breed quite true.
The stems are $1\frac{1}{2}$ -3 inches
wide and bunches of pods
are borne at the top of the

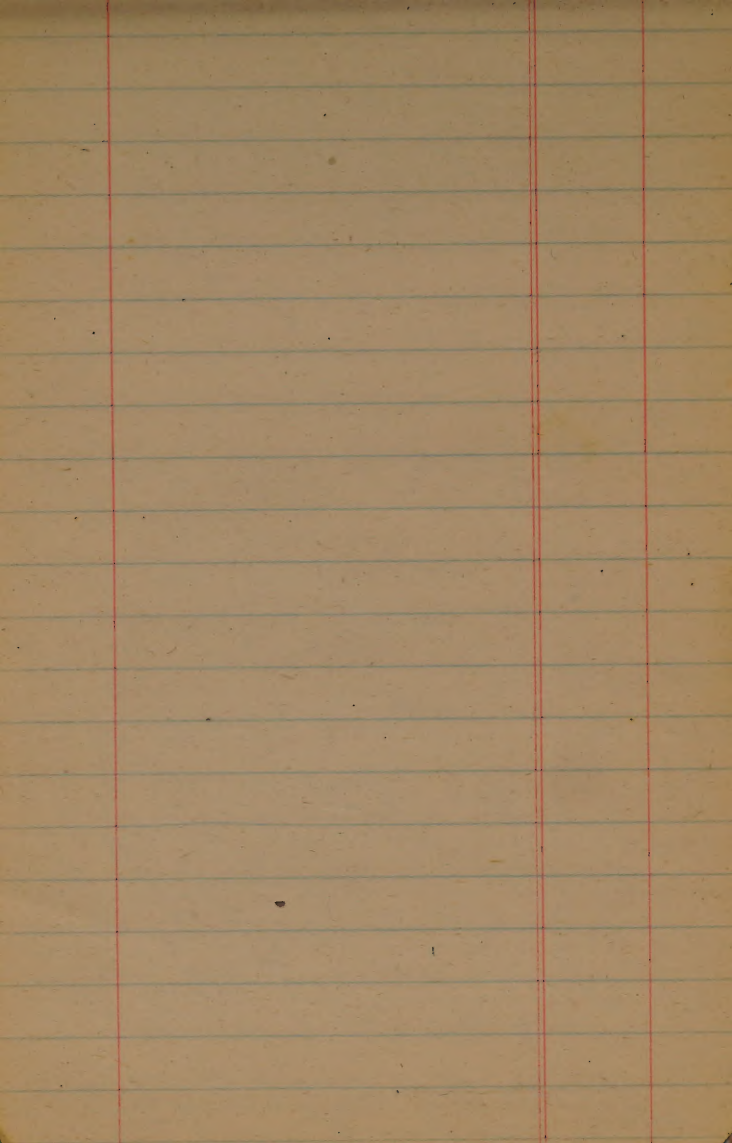
stem. There are occasionally
joints scattered down the stem.
There are no branches, simply
the one stem. Dr Nagai 
said these varieties were
being carried on with
the idea of cooking the green
vegetable beans. Seed was
promised us of these two
varieties.

Another exhibit of seed of
soybean varieties was shown
us and consisted of more
than 200 varieties which are
being grown at the present
time. Seed of these varieties
were promised us.









Wednesday, Dec 30, 1929

Left Keijo	7.55 A.M.
Arr. Chotam	9.18 A.M.
Lv. Chotam	7.45 P.M.
Ar. Keijo	9.07 P.M.
Fare Keijo - Chotam 3rd ^{cl}	90
Lv. Chotam by bus.	9.25 A.M.
Ar.	9.55 A.M.

Bus fare Chotam - Yumai
Bus fare Yumai - Koryoko
Ar. Chotam

Mr. Hae. Pres. of Society for
improving soy beans. Society
composed of more progressive
farmers. At Ag. fair each
member pays 20 sen for
supporting Society's work. Each
member does work toward
improvement of soy beans.
Once each year have a fair

winning members (18 in no)
bring soy beans they are
working with and samples
are judged by expert men
from county Ags. Assoc.
The best one is awarded
a prize. Society organized
three years ago.

Sand sample of Chotan
variety obtained. This
variety obtained Bronze
prize at Okayama Fair
on Main Island.

Left Furai - 11:20 AM

Am.

Arriving at the Chota Ry Sta
we took some movies of
bags of soy beans piled up
at the station for shipment.
These bags are made of rice
straw, hold about 110 lbs,
and cost from 25-35 sen

depending upon grade of
flood and often in the season.
We then took a bus for Yumai,
a section of Chotan. Along
the way we met many
two wheeled ox-carts loaded
with sacks of soy beans on the
way to the railroad station.

Arriving at Yumai we went
to the Agr. Society and an
assistant engineer was given
us to take us about in the
soy bean sections.

In the center of the village
we found a dirt threshing
floor where soy beans were
being fluted out. Moving
and still pictures were taken.

A visit was then made to
a director of a society, which

was organized 3 years ago for
the improvement of the soybean.
We were given a sample of
the soybean, called "Chotan"
said to be the one most generally
grown in this region and
reported to the main island
for making bean curd. It
said to be high in protein and
especially valuable for making
bean curd, giving 10% more
than other varieties. At last
year's grain show held on
the main island, the
"Chotan" variety was awarded
3rd prize (Bronze medal).

We then took a bus for
Koryoko, said to be quite
a center of soybean seed
production. All along the way
we met two wheeled ox-carts
loaded with rice sacks of

of soy beans. Arriving at Koryoh, we went to the village police station to obtain a permit for taking pictures, as we were advised by the police at Yumai, it would be necessary. It took us some time and much talk to obtain permission.

Our town or village, Koryoh is quite a center of soy bean trade as we observed bags of soy beans all along the streets and many ox carts loaded with bags of beans. The valley is along a river and we saw some stacks of bags of soy beans along the river bank awaiting shipment to Jinsen, a Korean seaport.

and their shipment to the
main island.

After our job is station
visit we went to a lunch
room, rather typically Chinese
and had Chop suey.

Planting soybeans in Korea.
Sow beans between wheat,
cultivate between wheat
rows - two rows of soybean
between wheat rows. Make
holes Ξ for beans with
hick of fork. Drop 2-3 beans
8 inches apart. Then
beans are covered by the
feet.

When 4-5 inches high
the first weeding and
cultivation which is
about wheat harvesting
time. Before blooming
soybeans are

cultivated 3 times. all
cultivated with hoe by hand.

Generally use no fertilizers
are used but sometimes
when beans are planted
or fertilized sometimes
at 2nd cultivation. The
Co. Ag. Soc. advises the
application of acid phosphate
fertilizers, 3-5 tons per
quarter acre.

When fertilizers is put
on at time of sowing wood
or straw ashes are added.
Wood ashes - 40-50 tons
per acre; straw ashes
60-70 tons per acre.

Date of maturity from
125-130 days.

Generally sow a bush

12th week in May and
harvest about Oct. 1.

Diseases or insect pest
not serious. The pod borer
occurs to a small extent.
But is not considered serious.

After our lunch we
visited the soy bean
inspection market where
the inspector was grading
bags of soy beans. Samples
were taken from the bags
with a plunger and the
beans graded according to
freedom from dirt and
trash, uniformity, and
quality. A sample was
obtained of the first grade.
The beans are classified
in three grades, and
stamped accordingly, and
also with the location.

moving pictures were taken
of the inspection, and the
inspection and stamping.
Farmers were continually
bringing in the beans, and
loads of inspected beans
were being carted to the
railway station and the
boat wharf for shipment
to the main island.

Several threshing scenes
were observed and in all
cases the beans were
flailed out on dirt
threshing floors in the
farm yards. The sweeping
up of the trash was also
noted and movies taken.
The beans are cleaned
by wind.

As we came back through the village cart tracks & teams were noted being brought in and loads of inspected beans were being taken either to the port wharf for shipment to Jinsen or to Chotan for railroad shipment.

On the outskirts of Koryoh we visited a large ginseng farm. Ginseng is on raised beds about 4 feet wide and a grass roof for shade is over the bed. Many acres were included on this farm. Along the edges of this farm lespediza (Korean) was noted along a bank. Seed of this was gathered. We decided to walk

along the main road until
the bus for Chotan overtook
us. It was noted that all
the soybeans had been
harvested, bundled, and
brought in the yards of the
farm homes. The bundles
are placed in piles to await
threshing. Several threshing
scenes were observed in the
farm yards. The threshed
straw the stems were
bundled up and placed in
piles for fuel. The pods
and smaller threshed stuff
was saved for cattle feeding.
The Koreans boil this stuff
with chopped fodder, generally
kaoliang. In harvesting the
bean plants are always
milled when they are

fully-mature, he stopped
at a few Korean hamlets to
observe threshing scenes.

Some samples of seed were
given us by the farmers.
The black and brown seeded
varieties are used for home
cooking, that is boiled with
foods. No red clover was
observed along the way.

Some brydza was noted but
not very extensive. About 3
miles from Koryoko a single
plant was found with some
mature seed. The bus came along
but was loaded so had to send
for taxi.

Talk fore-near Koryoko to Yumai
" " Yumai to Chotan

Postage Special

40

Thursday, Oct. 31, 1929

Keijo - Korea.

Mung bean noodles.

$\frac{1}{3}$ - $\frac{1}{2}$ mung bean & Kaolin.

Soak mung beans 12 hrs.
Then wash with stone
until the day beans for
bean curd. The material
is then squeezed

After grinding put in
water and strain off the
green liquid. Then flour
is squeezed out and
made into dry ball $\square$.

Then add hot water to
the dry wash and then
add brown corn flour
3 - 5. Brown corn flour
is added to make ball

bean material and
the mixture mixed for
 $\frac{1}{2}$ hours. Small balls
are then strained through
small sieve like holes
forming the vermicelli.
This fresh material is
run into boiling water
and then put into cold
water.

After washed in cold water
bring up and then put in
kettles of cold water and
left for day, then being
outside to dry.

About ten A.M. we started
out to visit the three markets
of Keigo and took over the
grain stores for varieties of
soy beans, adzuki beans,
and other crops.

While visiting the markets

where we purchased the following:

Soybeans	28
Adzuki Beans	3
Mung beans	2
Rice beans	2
Barley	3
Cornmeal	2

After the markets we visited a mung bean noodle or vermicelli factory on the outskirts of Keigo which was run by Chinese. The process of vermicelli was watched throughout and a sample of the mung beans obtained.

At one of the markets two baskets of roasted grasshoppers were seen. After the vermicelli

factory and lunch came
back to the room and
numbered the samples of
sand collected today.

Friday, Nov. 1, 1929

Cool and clear. In the morning wrote notes before breakfast.

Worked on expense account in the morning, and also on seed samples.

At 1 P. M. left for the Prefecture Seed & Nursery Farms where we met Mr. Yamaguchi, Director of the farms.

Each prefecture has its own seed and nursery farms or experiment station of Korean origin. These farms test out seeds sent from the Japanese Exp. Sta. After seeds are tested and grown for seed distribution, the seed of these best varieties

are then sent to the village
agr. associations. Also test
out animals. All the
prefecture seed & nursery
farms are controlled by the
Seiyou Exp. Sta. The Seiyou
Station sends out to each
prefecture seed for testing.
After the Prefecture seed &
Nursery farms test out the
seeds, they send out the
seed and nursery stock
to the village agr. associations.

The two principal varieties
of Keigo prefecture are the
Chotan White Eye and the
Chotan Brown Eye. The White
eye on rich grounds makes
excellent crops while the
Brown eye is better adapted
to poorer gravelly soils. The
White eye is suited to

rich sandy loams. The white eye is not suited to poor soils while the Brown eye is not suited to rich soils. The market demand is more for the white and a higher price is better for the white eye. In regions of poor soil the Brown eye is most extensively grown but farmers in the poor regions are using fertilizers in order to try to grow the white eye variety. In the former fields there is more or less nematode.

Beans are planted between rows of grain, planted at end of April and first of May. Harvest at end of September or first of Oct.

Holes are made with heel
and covered with the feet.
3-4 grains to hole. Holes
are 7-8 (10 in) in. apart.
In Keigo prefecture only
one row of beans is planted
though some farmers plant
two rows of beans (these
bean rows about 12 in
apart. The grain rows
are about 3 ft. apart.

Koto and Chotanai
yields. An farmer the
general average yield is
about 8 bu. per ^{1/4} acre.
Beans are class in this
prefecture by large and
small seed. The later is
used for sprouts, feeding
cattle, and for green manure.
The large grains are used
for food purpose. Such

as tofu, miso, shoyu, and
for boiling in the home,
green manures are
seldom used by farmers
in this section. This year
alfalfa, astragalus, soybeans
and winter ^{vetch} were tried
on some farms and at
the station. Winter vetch
has been found the best.

Seiji, Yamaguchi
seed & nursery
field of Kei Kei do
Chosen (outside
of Kei jo Itoed)

Saturday, Nov. 2, 1929

Keijo. Chosen.

Left Keijo - 3rd C

7.30 AM.

Arr. Suigen

8.50 AM.

R.R. fare (3 C) Keijo - Suigen

65

Left Suigen.

5 240.

Arr. Keijo.

6 45

R.R. fare Suigen & Keijo

65

J. Brodera

Agr. Exper. Station

Suigen, Chosen, Japan

3 farmers' bulletins on soybeans.

Amer. Soybean Publication.

Milled & soybeans (Soybean)

✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	2-3 ft.
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Soybeans 2 - 3 ft apart
in rows - Milled drilled

along - 10 plants to 12 in.
Soy beans plant 1 ft. apart
and 3 seed to each hill
Both soy beans and millet
saved for grain. This
method is applied to
any grain, corn, sorghum
and pearl millet. Pearl
millet is grown in the
paddy fields for grain.

Prefecture Hiogoⁿ

Average	51,000 cho
Production	270,000 Koku

The crops vary
quite widely among the
different villages in this
prefecture. Soy beans
when planted alone yield
42% more grain than
when planted in
mixture in rows with
other grains. With

mailed - soy beans
yielded 24.7 per cent live
beans; with barley and
wheat 21.4 % live of
beans - Between corn
5 % live yield of beans;
with brown corn 4.2 %.
loss in soy bean seed
yield.

3- Methods

Soy beans alone.

Between rows. Wheat-Barley

In mixtures.

Time of planting, Chosen.

Sown from May 1-15 and

Swigen. In southern part
(15) in June because beans
are planted between barley
rows after barley is
harvested. In northwestern
part our beans are sown

on side of barley ridges just before barley is harvested or just after.

Planting done mostly by women. Holes are made with heels ($2\frac{1}{3}$ of an acre planted a day by this method). Practically no fertilizers used. May and June rather dry. Hole made with heel rather sharp to compress soil and conserve moisture. Beans are covered with the heel. This method is said to give excellent germination. The women make the holes, drop the beans and cover beans with feet. 5-6 beans dropped per hole, the holes about 12 in apart. 6 shov to 1 tan ($\frac{1}{4}$ acre).

Here

Plants are usually pulled when fully mature or sometimes cut (but very seldom). After pulling the plants are placed in bundles and taken to the yard of the farmer's home to await threshing.

The threshing is done mostly with flails though some farmers beat out with stick.

In spring young plants are attached by numerous roots. Pod bore not very extensive in Chosai.

Farmers receive 12-13 (12-13) yen per koku for soybeans.

Marketing - Farmers sell

to merchants in small villages who sell to merchants in larger villages. The merchant does the grading but the farmer receives no ~~money~~ certain price for different grades.

Grading is done by size of seeds - the larger sizes receiving the greater prices. Also graded on uniformity of size, hard color, insect injury, and amount of trash.

Soy beans have four grades
Grades -

Extra - 1 - 2 - 3 - 4.

Extra - Should contain ^{inquiries} ~~inquiries~~ ^{rejection} ~~rejection~~ if less than 1% - Should be new seed only, Should contain only one variety
1 - Purity - less than 5%.

- impurities less than 2%
- 2 - Purity - 10% less
impurities - 3 1/2% less
- 3 Purity - 20% less
impurities 4%
- 4 Purity of variety - 30%
impurities 5%

Straw sack should be
or more
over 600 more in weight,
straw rope for fastening
should weigh 11 more
and sack should be
fastened



Each sack should
contain 4 to.

Utilization

Used for making miso
and soy sauce. Miso
is generally made by

The farmers themselves
and say a word of an
inferior quality. This is
done in big jars outside
the dwelling. Beans could
not used so extensively
by Koreans as do the
Japanese. Beans also
made into flour to cover
rice cakes.

Farmers dispose^{of} beans
at once to merchants who
grade them and resack
and store for shipment
to larger places.

Large number of varieties
grown in Korea but are
inferior and badly mixed.
New varieties are distributed
by station and try to replace
old mixed sorts.

The Suigen station has

estimated about 1000 varieties, both Korean and Japanese varieties.

About 60 % of commercial fertilizers used in Korea is soybean cake. In Korea, commercial fertilizers are not used very extensively; about 10,000,000 yen of which at least 50 % is soybean cake. This is used to a very considerable extent in rice paddies.

Fertilizers in Korea.

Soybean cake	7,308,000
Other cake (fish, peilla,)	483,000
Ammonium sulfate	4,555,000
Other Comm. fert	1,759,000
Rice bran	494,000

Dr. S. Nagai

Saigun, Korea.

all varieties of American
soybeans.

Kankyo Hokurdo
Special Bull. No. 3

On the soybean of Kankyo Hokurdo

S. Kuroyozo

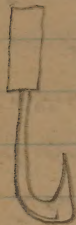
address

Kyozo.

Kankyo Hokurdo.

Chosen.

Soybeans are also
planted by means of
stick with an iron hook
which is called "Horn".
It is also used for weeding.
The holes for planting
are made with this
implement.



Dr. Nagai has a

Master's degree from
Cornell having spent
1911 in Ithaca, and had
work with Slichty, Virall,
and Hinters.

After lunch in Dr. Nagai's
room went to call on
the Horticulturist and
also Dr. Director
of the school. We were served
cigarettes, and tea. Also
were given post cards
showing views of the station.

We were taken out
to the arboretum which
is very extensive and
contains a very large
number of plants of
Korea as well as plants
from other countries. We

were able to collect quite a lot of seed from various Korean trees and shrubs.

Also attended the students agricultural and forestry exhibit which was being held in one of the college buildings. The exhibit of products was excellent and represented products grown by the students in their school gardens. The students were also judging the various products. Fruits, vegetables, field seeds (such as soy beans, adzuki beans,) fruits were exhibited.

Sunday Nov. 3, 1929.

Keijo, Chosen.

Cold and clear. In the morning worked on writing up introduction cards for seed collections. Also worked on expense account. Went out for lunch and then took a short walk in the Korean quarters.

After return to hotel worked on expense account until Mr. Sanyalaka came and we talked over future trips in Korea. Went to Chinatown on way went up to Ginzan to a store handling Aburahi a product made from

soybean flour. Two
kinds of Almen are
made - 1 pure and 1
sweet.

Almen is called "The
Health Food Drink" and
manufactured by the
Nippon Almen Shokuryo Co.
Sumiyoshi, near Kobe,
Japan.

It is sold in different
sized cans. Samples were
purchased for the Office
of Forage Crop Exhibit.

2 cans Sweet Almen	1	90
1 " Pure Almen	1	50

The owner of the store said
that the whole bean is
ground into fine flour
and then dried in the
Sun.

To the sweet Almen

sugar and lemon
flavoring is added.
This material is also
used in the manufacture
of small cakes, some like
biscuits and others as
coating over adsorbent
pastes. Used in this way
only a small proportion
of Alumen is used, being
mixed with wheat flour.

$$\begin{array}{r} 63 \\ \underline{56} \\ 121 \end{array}$$

65	10	Root cutter
121	<u>1</u>	Stump puller
<u>186</u>	6	_____

$$\begin{array}{r} 120 \\ \underline{135} \\ 135 \end{array}$$

1.5.11/11.11

